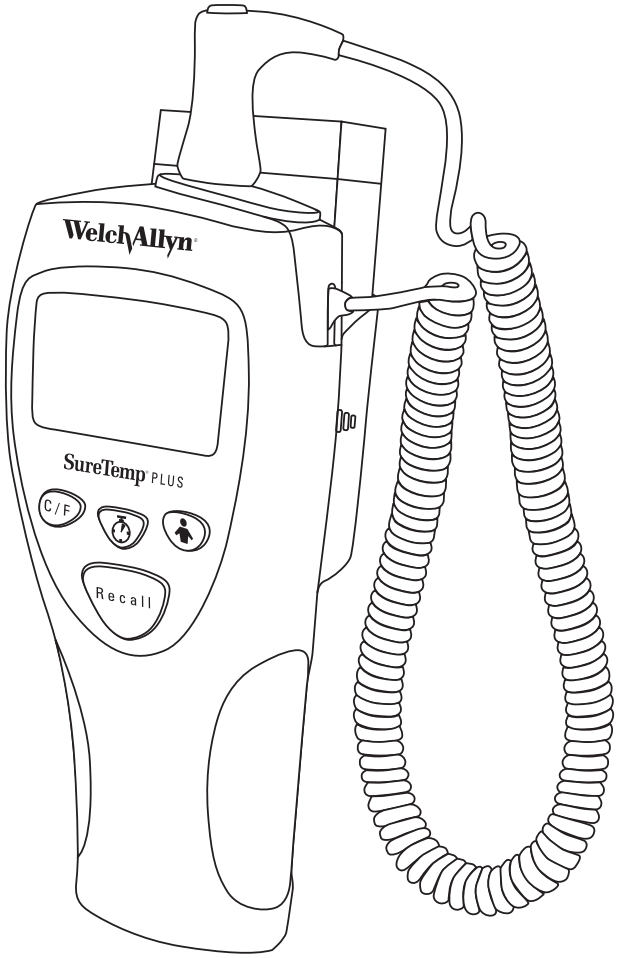
SureTemp® Plus

REF 690 and 692



Directions for use

Welch Allyn®

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Welch Allyn assumes no responsibility for any injury, or for any illegal or improper use of the product, that may result from failure to use this product in accordance with the instructions, cautions, warnings, or indications for use published in this manual.

Welch Allyn is a registered trademark of Welch Allyn, Inc.

Patent information

For patent information, please visit www.welchallyn.com/patents.

Welch Allyn Technical Support:

http://www.welchallyn.com/about/company/locations.htm

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Welch Allyn, Inc.
4341 State Street Road
Skaneateles Falls, NY 13153 U.S.A.

EC REP

Regulatory Affairs Representative
Welch Allyn Limited
Navan Business Park
Dublin Road, Navan
County Meath, Republic of Ireland

www.welchallyn.com

CE 0297

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Conforms With

IEC/UL/CSA/EN 60601-1

Australian Communications and Media Authority (ACMA) Radio Compliance Mark (RCM)

Symbols and Descriptions

Consult directions for use (DFU). A copy of the DFU is available on this website. A printed copy of the DFU can be ordered from Welch Allyn for delivery within 7 calendar days.

Type BF Applied Part

Fragile

Temperature Limit

Humidity Limitation

Internally Powered Alkaline Battery - AA 1.5V

IPXØ

Not protected against the ingress of water.

Does not contain natural rubber latex.

Keep Dry

Do not re-use, Single use device

Recyclable

Separate collection of Electrical and Electronic Equipment. Do not dispose as unsorted municipal waste.

Product Identifier.

Reorder Number

Safety and Warnings

WARNING No modification of this equipment allowed.

WARNING Patient injury risk. Prior to taking a temperature, instruct the patient not to bite down on the probe as patient injury and damage to the probe may result.

WARNING Patient injury risk. Use only Welch Allyn single-use disposable probe covers. **A new probe cover needs to be used with each new temperature taken.** Never take a temperature measurement without a single-use probe cover securely attached. Failure to use a probe cover can cause patient discomfort from a heated probe, patient cross-contamination, and inaccurate temperature readings.

WARNING Patient injury risk. Inaccurate measurement risk. Oral/axillary probes (blue ejection button at top of probe) and blue removable probe wells are used for taking oral and axillary temperatures only. Rectal probes (red ejection button) and red removable probe wells are used for taking rectal temperatures only. Use of the incorrect removable probe well could result in patient cross-contamination. Use of the probe at the wrong site will result in temperature errors.

WARNING Patient injury risk. When taking rectal temperatures, insert the probe tip only 5/8 inch (approximately 1.5 cm) inside the rectum of adults and only 3//8 inch (approximately 1 cm) inside the rectum of children to avoid the risk of bowel perforation.

WARNING Inaccurate measurement risk. Never take an axillary temperature through the patient's clothing. Carefully place the probe in the axilla, avoiding contact with other objects or material.

WARNING Patient injury risk. Continuous measurement durations of 3 minutes at the oral and rectal sites and 5 minutes at the axillary site are recommended for accurate measurement. Do not continuously measure beyond 10 minutes in any mode.

WARNING To ensure patient safety and temperature measurement accuracy, use only accessories and supplies recommended or supplied by Welch Allyn.

WARNING Never use a damaged temperature probe. The thermometer consists of high-quality precision parts and should be protected from severe impact or shock. Do not use the thermometer if you notice any signs of damage to the probe or instrument. If the thermometer probe is dropped or damaged, remove it from use and have it inspected by qualified service personnel.

WARNING Equipment is not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide.

WARNING Inaccurate measurement risk. For rectal measurements, apply a thin layer of lubricant to probe cover, if necessary, for patient comfort. Use of excessive lubricant may affect reading accuracy.

WARNING Inaccurate measurement risk. To ensure optimal accuracy, always confirm that the correct mode and site are selected.

Caution Liquids can damage electronics inside the thermometer. Prevent liquids from spilling on the thermometer. If liquids are spilled on the thermometer, dry off the thermometer with a clean cloth. Check for proper operation and accuracy. If liquids possibly entered the thermometer, remove the thermometer from use until it has been properly dried, inspected, and tested by qualified service personnel.

Caution Welch Allyn recommends that batteries are removed for long term storage since alkaline batteries can deteriorate and leak over extended periods of time, and possibly cause damage to the thermometer.

Caution Do not autoclaveany component of this product. Please note the cleaning procedures described on page 18 of this manual.

Caution Do not use this instrument for any purpose other than that specified in this booklet. Doing so will invalidate the instrument's warranty.

Caution This thermometer complies with current required standards for electromagnetic interference and should not present a problem to other equipment nor is it effected by other devices. As a precaution, avoid using this device in close proximity to other equipment.

Caution Inaccurate measurement risk. Patient activites such as strenuous exercise, ingesting hot or cold liquids, eating, chewing gum or mints, brushing teeth, or smoking may effect oral temperature measurements for up to 20 minutes.

Caution Probe covers are disposable, nonsterilized, and single-use. Probes are also nonsterilized. Do not autoclave probes and probe covers. Ensure that probe covers are disposed of according to facility requirements or local regulations.

Introduction

Please follow the operating and maintenance instructions provided in this manual to ensure years of accurate and reliable service. Please read these instructions thoroughly before using the instrument, and then store these instructions in a safe place for future reference.

The Welch Allyn SureTemp Plus is a portable thermistor thermometer used for accurately measuring body temperatures at oral, axillary, or rectal sites. The device measures temperature by default in predictive (Normal) mode, during which it uses a predictive algorithm to calculate patient temperature. If you cannot correctly measure the patient's temperature in Normal Mode, the unit will automatically enter Monitor (Direct) Mode.

Normal body temperature is a range, which varies from person to person and is influenced by factors such as time of day and an individual's level of activity, ingested medications, age, and gender. A person's normal temperature tends to decrease with age.

The following table shows that ranges of normal also vary by site. Do not directly compare measurements from different sites.

This booklet provides informative tips and instructions for using the SureTemp Plus model 690 and model 692 thermometers. The chart on the following page provides details about the differences between these SureTemp Plus instruments.

Normal Body Temperature Ranges *

°C	0 - 2 years	3 - 10 years	11 - 65 year	> 65 years
Oral	—	35.5 – 37.5	36.4 – 37.5	35.8 – 37.0
Rectal	36.6 – 38.0	36.6 – 38.0	37.0 – 38.1	36.1 – 37.3
Axillarye	34.7 – 37.3	35.9 – 36.7	35.2 – 36.9	35.5 – 36.3
Ear	36.4 – 38.0	36.1 – 37.8	35.9 – 37.6	35.8 – 37.5
Core	36.4 – 37.8	36.4 – 37.8	36.8 – 37.9	35.9 – 37.1

Normal body temperature is a range. This table shows that normal temperatures vary by site. Therefore, readings from different sites, even if taken at the same time, should not be directly compared.

* References

Chamberlain, J. & Terndrup, T., et. al.; "Determination of Normal Ear Temperature Using an Infrared Emission Detection Thermometer "; Annals of Emergency Medicine; January, 1995.

Braun, S., Preston, P., and Smith, R.; "Getting a Better Read on Thermometry "; RN Magazine; March, 1998.

"Temperature Measurement in Paediatrics"; Paediatric Child Health Vol 5 No 5; July / August, 2000.

Brunner, L. and Suddarth, D., et. al.; The Lippincott Manual of Nursing Practice; 1982; p.1145.

Erickson, R., Temperature Taking Sourcebook ; IVAC Corporation, San Diego, CA , 1993.

Houdas, Y., et. al.; Human Body Temperature, Its Measurement and Regulation; 1982; p.81-87.

SureTemp Plus Model Comparison Chart

This manual describes features found in SureTemp Plus model 690 and 692 thermometers. Certain features are not available to users of the model 690 thermometer.

	SureTemp Plus Model 690	SureTemp Plus Model 692
Probe Cover Storage	X	X
F/C Conversion	X	X
Last Temperature Recall	X	X
Monitor Mode	X	X
Detachable Probe	X	X
Oral / Axillary / Rectal Modes on Each Thermometer	X	X
Color-Coded Removable Probe Well	X	X
Wall-Holder Standard		X
Pulse Timer		X
Backlight		X
Security (Electronic)		X
Configurable On-Screen Labeling for Identification of Instrument		X
Sold in U.S./Canada	X	X
Sold Internationally	X	X
Instrument Warranty	2 years	3 years
Removable Probe Well	90 days	90 days
Probe Warranty	1 year	1 year

Indications/Contraindications

The Welch Allyn SureTemp Plus thermometer measures patient's temperature in the oral, axillary, and rectal body sites of adult, pediatric, and newborn patients. The device is not designed, sold, or intended for use except as indicated.

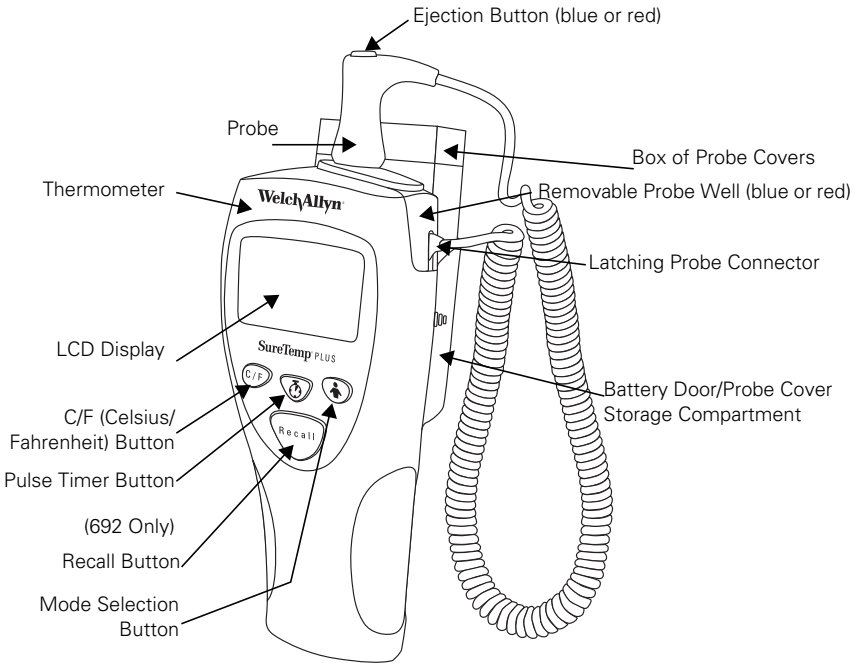
Latex Statement

The components of the SureTemp Plus device that could contact the user or patient were not made with natural rubber latex. This includes all items that could be contacted during normal operation, and all other functions, such as user maintenance and cleaning, as are defined in the *Directions for use*.

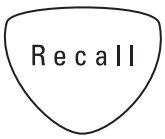
No internal components are known to be made with natural rubber latex.

Parts and Features

You can find the serial number of your device on a label affixed to the rear housing inside the unit's probe cover storage compartment. Please note the parts of your Welch Allyn SureTemp Plus thermometer as shown below:



Button Functions

Buttons	Procedure
C/F	Press and release the **C/F (Celsius/Fahrenheit)** button to toggle between temperature scales any time a temperature is displayed on the LCD.
Pulse Timer (692 Only)	Press and release the **Pulse Timer** button to activate the timer. Audible beeps sound at 0, 15, 30, 45, and 60 seconds. The timer turns off automatically after 60 seconds. You can stop the timer at any time by pressing the **Pulse Timer** button or by removing the probe from the probe well.
Mode Selection	Press and release the **Mode Selection** button after you have withdrawn the blue probe from the probe well to change the current measurement site to Oral, Adult Axillary, or Pediatric Axillary. The selected measurement site is displayed by a flashing body site icon. Note that no other measurement sites are available when using the red probe in the Rectal Mode.
Recall 	Press and release the **Recall** button when the display is blank to recall the last completed predicted temperature. The LCD will display the recalled temperature for five seconds along with the battery icon, temperature scale, mode selection, and probe-position icon (if applicable).

Set-Up

ASSEMBLING THE UNIT

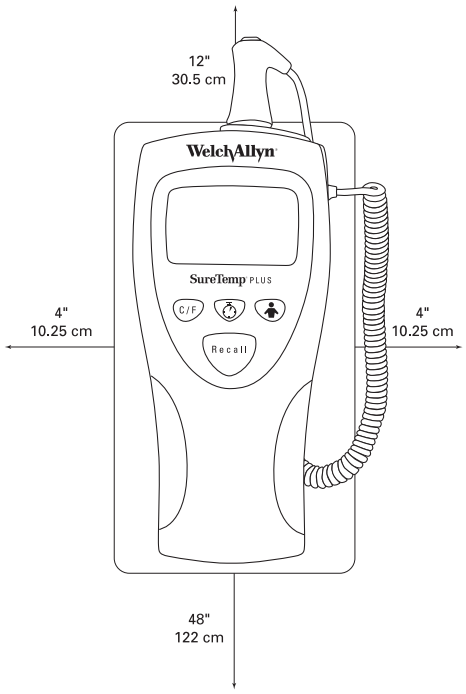
Your SureTemp Plus thermometer is shipped to you with three 1.5V AA batteries installed.

1. Install the oral/axillary probe (blue ejection button) or optional rectal probe (red Ejection button) by inserting the latching probe connector on the end of the coiled cord into the unit's plug receptacle. Ensure that the connector snaps into place. The LCD will illuminate for approximately 7 seconds and will then turn off.
2. Connect the appropriate removable probe well to the thermometer. Note that the cut-out in the probe well fits over the probe cord strain relief. Ensure that the removable probe well "snaps" into position and is completely seated to the thermometer. Place the probe into the well.
3. Insert the box of Welch Allyn disposable probe covers into the probe cover storage holder. To open the box of probe covers, remove and discard the tear-away corner. You will see the ends of the probe covers in the box.

MOUNTING THE UNIT

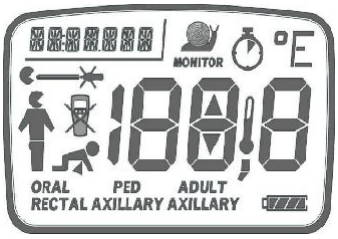
Mount the wall-mount bracket in a location such as an interior wall or wall divider so that the thermometer remains at ambient room temperature. Mounting the unit on an uninsulated exterior wall, in an area directly hit by sunlight, above heat radiators or powered equipment (including computers and lights), or below air conditioning outlets is not recommended.

Proper mounting of the unit will prevent tangling of the probe cord with other equipment at the patient's bedside.



1. Mount the instrument so that all other objects are no closer than 4 inches (10.25 cm) from the sides and bottom of the unit.
2. Mount the wall mount a maximum of 48 inches (122 cm) from the floor.
3. Install the wall mount to allow at least 12 inches 30.5 cm) clearance on top of the instrument. This provides ease of removing and installing the probe and probe well or installing probe covers onto the probe.

Display Indicators



Instrument Malfunction

The device is not working properly. Contact Welch Allyn's Customer Service Department for assistance.

Broken Probe

The probe is broken. Replace probe or contact Welch Allyn's Customer Service Department for assistance.

Loss of Tissue Contact

The probe has lost contact with the patient's tissue. The icon will disappear once proper contact is achieved. The icon will later reappear at the end of the temperature measurement. It is recommended that you take a new temperature reading.

ID Field

This is a seven-character field that allows customized identification of the instrument via user-selected letters and numbers. See the Model 690/692 Service Manual for set-up instructions.

Walking Segments

The dark bar will move around the display when the thermometer is in the process of taking a temperature.

Oral Mode

This flashing icon and/or word are displayed to show that the Oral Mode is selected.

Adult Axillary Mode

This flashing icon and/or words are displayed to show that the Adult Axillary Mode is selected.

Ped Axillary Mode

This flashing icon and/or words are displayed to show that the Pediatric Axillary Mode is selected.

Rectal Mode

This flashing icon and/or word are displayed to show that the Rectal Mode is selected.

Monitor Mode

This icon is displayed while in Monitor Mode. Monitor Mode is used for continuous temperature monitoring when difficult situations prevent accurate temperatures in the Normal Mode. For oral and rectal sites, three minutes of continuous monitoring is recommended for an accurate temperature reading. For axillary sites, five minutes of continuous monitoring is recommended.

Patient Temperature Exceeds Upper Measurement Range Limit of 110.0 °F (43.3 °C)

Patient Temperature Is Lower than Measurement Range Limit of 80.0 °F (26.7 °C)

Ambient Temperature Exceeds Upper Measurement Range Limit of 104.0 °F (40.0 °C)

Ambient Temperature Is Lower than Measurement Range Limit of 50.0 °F (10.0 °C)

Pulse Timer

This icon indicates that the device is in the Pulse Timer Mode.

Low Battery

A single flashing segment appears on the battery symbol. Normal operation is not affected. Replace the batteries.

Dead Battery

An open battery symbol remains on the LCD and the device will not operate. Replace the batteries.

Security Mode

The instrument is in Security Mode. Return the thermometer to the wall holder to resume normal operation See page 17 to set the instrument in Security Mode (Model 692 only).

Oral Temperature Measurement

Using Probe with Blue Ejection Button and Blue Probe Well

When used correctly, the SureTemp Plus thermometer accurately measures an oral temperature in approximately 4–6 seconds. The ability of the SureTemp Plus thermometer to take an accurate oral temperature requires correct user technique.

TAKING AN ORAL TEMPERATURE

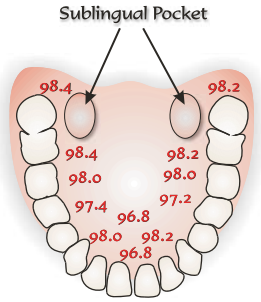
WARNING Do not take a patient's temperature without using a Welch Allyn disposable probe cover. Doing so can cause patient discomfort, patient cross contamination, and erroneous temperature readings.

1. Ensure that the oral probe (**blue ejection button**) and the **blue probe well** are installed.
2. Holding the probe handle with your thumb and two fingers on the indentations of the probe handle, withdraw the probe from the probe well.
3. Verify that the oral model icon is selected by observing the flashing head icon on the instrument's display. If this icon is not flashing, press the **Mode Selection** button until the head icon appears.

4. Load a probe cover by inserting the probe into a probe cover and pressing the probe handle down firmly. The probe handle will move slightly to engage the probe cover.

WARNING Use only Welch Allyn probe covers. The use of other manufacturer's probe covers or no probe cover may produce temperature measurement errors and/or inaccuracy.

5. With the Oral Mode indicator flashing, quickly place the probe tip under the patient's tongue on either side of the mouth to reach the rear sublingual pocket. Have the patient close his/her lips around the probe.



6. Hold the probe in place, keeping the tip of the probe in contact with the oral tissue throughout the measurement process. Rotating "walking" segments appear on the display, indicating that measurement is in progress.
7. The unit will beep three times when the final temperature is reached. The measurement site, temperature scale, and patient temperature will display on the LCD. The final temperature will remain on the display for 30 seconds.
8. If you cannot correctly measure the patient's temperature in Normal Mode, the unit will automatically enter Monitor Mode. In this mode, measurement time is extended. Either repeat the temperature measurement in Normal Mode in the opposite sublingual pocket or keep the probe in place for three minutes in Monitor Mode. The thermometer will not beep to indicate a final temperature. Record the temperature

before removing the probe from the site, as the temperature reading is not maintained in memory.

WARNING Patient injury risk. Do not exceed the recommended temperature measurement durations in Direct Mode. Continuous measurement durations of 3 minutes at the oral and rectal sites and 5 minutes at the axillary site are recommended for accurate measurement. Do not continuously measure beyond 10 minutes in any mode.

9. After the temperature measurement is complete, remove the probe from the patient's mouth. Eject the probe cover by firmly pressing the ejection button on the top of the probe.
10. Return the probe to the probe well. The LCD display will go blank.

Caution Patient actions may interfere with accurate oral temperature readings. Ingesting hot or cold liquids, eating food, chewing gum or mints, brushing teeth, smoking, or performing strenuous activity may affect temperature readings for up to 20 minutes after activity has ended.

Axillary Temperature Measurement

Using Probe with Blue Ejection Button and Blue Probe Well

When used correctly, the SureTemp Plus thermometer accurately measures an axillary temperature for pediatric patients (ages 17 and younger) in approximately 10–13 seconds and for adult patients (ages 18 and older) in approximately 12–15 seconds.

PLACING THE THERMOMETER INTO AXILLARY MODE

WARNING Do not take a patient's temperature without using a Welch Allyn disposable probe cover. Doing so can cause patient discomfort, patient cross contamination, and erroneous temperature readings.

1. Ensure that the axillary probe (**blue ejection button**) and the **blue probe well** are installed.
2. Holding the probe handle with your thumb and two fingers on the indentations of the probe handle, withdraw the probe from the probe well.
3. Verify that the axillary mode is selected by observing the correct flashing axillary icon on the instrument's display. If this icon is not flashing, press the **Mode Selection** button to select the Adult Axillary or Pediatric Axillary icon is displayed.

Adult Axillary Mode Icon

Pediatric Axillary Mode Icon

Caution To ensure optimal accuracy, always confirm that the correct axillary mode is selected.

Caution After a temperature is taken and the probe is returned to the probe well, the instrument reverts to the original measurement site mode.

TAKING AN AXILLARY TEMPERATURE

WARNING Do not take an axillary temperature through patient's clothing. Direct contact between patient's skin and the probe is required.

1. Load a probe cover by inserting the probe into a probe cover and pressing the probe handle down firmly. The probe handle will move slightly to engage the probe cover.

   WARNING Use only Welch Allyn probe covers. The use of other manufacturer's probe covers or no probe cover may produce temperature measurement errors and/or inaccuracy.

2. With the correct axillary mode indicator flashing, lift the patient's arm so that the entire axilla is easily seen. Place the probe as high as possible in the axilla. Do not allow the probe tip to come into contact with the patient until the probe is placed in the measurement site. Before this, any contact between the probe tip and the tissue or other material may cause inaccurate readings.
3. Verify that the probe tip is completely surrounded by axillary tissue and place the arm snugly at the patient's side. Hold the patient's arm in this position and do not allow movement of the arm or probe during the measurement cycle. Rotating "walking" segments appear on the display, indicating that measurement is in progress.
4. The unit will beep three times when the final temperature is reached. The measurement site, temperature scale, and patient temperature will display on the LCD. The final temperature will remain on the display for 30 seconds.
5. If you cannot correctly measure the patient's temperature in Normal Mode, the unit will automatically enter Monitor Mode. In this mode, measurement time is extended. Either repeat the temperature measurement in Normal Mode in the opposite axilla or keep the probe in place for five minutes in Monitor Mode. The thermometer will not beep to indicate a final temperature. Record the temperature before removing the probe from the site, as the temperature reading is not maintained in memory.

   WARNING Long-term continuous monitoring beyond five minutes is not recommended in the Axillary Mode.

6. After the temperature measurement is complete, remove the probe from the patient's axilla. Eject the probe cover by firmly pressing the ejection button on the top of the probe.
7. Return the probe to the probe well. The LCD display will go blank.

   WARNING Probe contact with electrodes, bandages, etc., poor tissue contact, taking a temperature over clothing, or prolonged exposure of axilla to ambient air can cause inaccurate temperature readings.

Rectal Temperature Measurement

Using Probe with Red Ejection Button and Red Probe Well

When used correctly, the SureTemp Plus thermometer accurately measures rectal temperature in approximately 10–13 seconds.

TAKING A RECTAL TEMPERATURE

WARNING Cross contamination or nosocomial infection risk. Thorough hand-washing greatly reduces the risk of cross-contamination and nosocomial infection.

WARNING Do not take a patient's temperature without using a Welch Allyn disposable probe cover. Doing so can cause patient discomfort, patient cross contamination, and erroneous temperature readings.

1. Ensure that the rectal probe (**red ejection button**) and the **red probe well** are installed. The instrument will only operate in Rectal Mode when the red rectal probe and probe well are installed.
2. Holding the probe handle with your thumb and two fingers on the indentations of the probe handle, withdraw the probe from the probe well.
3. Observe the flashing lower-body icon on the unit's display. Load a probe cover by inserting the probe into a probe cover and pressing the probe handle down firmly. The probe handle will move slightly to engage the probe cover.

WARNING Use only Welch Allyn probe covers. The use of other manufacturer's probe covers or no probe cover may produce temperature measurement errors and/or inaccuracy.

4. With the Rectal Mode indicator flashing, separate the patient's buttocks with one hand. Using the other hand, gently insert the probe only 1.5 cm (5/8 in.) inside the rectum (less for infants and children). The use of a lubricant is optional.

WARNING Patient injury risk. When taking rectal temperatures, insert the probe tip only 5/8 inch (approximately 1.5 cm) inside the rectum of adults and only 3/8 inch (approximately 1 cm) inside the rectum of children to avoid the risk of bowel perforation.

5. Tilt the probe so that the tip of the probe is in contact with tissue. Keep the hand separating the buttocks in place, and hold the probe in place throughout the measurement process. Rotating "walking" segments appear on the display, indicating that measurement is in progress.
6. The unit will beep three times when the final temperature is reached. The measurement site, temperature scale, and patient temperature will display on the LCD. The final temperature will remain on the display for 30 seconds.
7. If you cannot correctly measure the patient's temperature in Normal Mode, the unit will automatically enter Monitor Mode. In this mode, measurement time is extended. Either repeat the temperature measurement in Normal Mode or keep the probe in place for three minutes in Monitor Mode. The thermometer will not beep to indicate a final temperature. Record the temperature before removing the probe from the site, as the temperature reading is not maintained in memory.

WARNING Long-term continuous monitoring beyond three minutes is not recommended in Rectal Mode.

8. After the temperature measurement is complete, remove the probe from the patient's rectum. Eject the probe cover by firmly pressing the ejection button on the top of the probe.
9. Return the probe to the probe well. The LCD display will go blank.

10. Wash your hands.

WARNING Washing hands greatly reduces the risk of cross-contamination and Nosocomial Infection.

Monitor Mode Temperature Measurement

Using Probe with Blue Ejection Button (Oral/Axillary) or Red Ejection Button (Rectal)

Monitor Mode continuously displays the temperature of the probe for as long as the probe remains in place at the measurement site and remains within the operating patient temperature range. The patient's oral and rectal temperature will reach final equilibrium in approximately three minutes in the Monitor Mode. Axillary temperature will reach equilibrium in approximately five minutes in the Monitor Mode.

Caution Monitored temperatures are not stored in memory for recall.

TAKING A TEMPERATURE USING MONITOR MODE

WARNING Do not take a patient's temperature without using a Welch Allyn disposable probe cover. Doing so can cause patient discomfort, patient cross contamination, and erroneous temperature readings.

1. Ensure that both the appropriately colored probe and matching probe well for the intended measurement site (oral/axillary or rectal) are installed.
2. Holding the probe handle with your thumb and two fingers on the indentations of the probe handle, withdraw the probe from the probe well.
3. Load a probe cover by inserting the probe into a probe cover and pressing the probe handle down firmly. The probe handle will move slightly to engage the probe cover.

WARNING Use only Welch Allyn probe covers. The use of other manufacturer's probe covers or no probe cover may produce temperature measurement errors and/or inaccuracy.

4. Take the patient's temperature using the normal Oral, Rectal, Pediatric Axillary, or Adult Axillary Mode as previously described.
5. Continue to hold the probe in position after the temperature is displayed.
6. Press the **Mode Selection** button until the Monitor Mode indicator appears on the LCD.

7. Hold the thermometer in place for the required duration:

Oral	3 minutes
Axillary	5 minutes
Rectal	3 minutes

WARNING Long-term continuous monitoring beyond three to five minutes is not recommended in any mode.

8. Record the temperature before removing the probe from the site.
9. Eject the probe cover by firmly pressing the ejection button on the top of the probe.
10. Replace the probe in the probe well to clear the display and reset the thermometer to Normal Mode. The thermometer will not beep to indicate a final temperature.

WARNING The unit will automatically enter Monitor Mode if the probe is withdrawn from the probe well and is not replaced within 60 seconds of inactivity.

Instrument Security

The SureTemp Model 692 thermometer is equipped with electronic security options designed to reduce the risk of theft. These options include both Temperature Count and Instant-On security features.

TEMPERATURE COUNT

The Temperature Count security feature allows you to take a set number of temperature readings before the instrument goes into the security alarm state. The selectable counts are 25, 50, 100, and 200. As the instruments nears the final reading, it will display **SECURITY COUNT** as a warning, along with a number representing the last 5 temperature counts (i.e., 5,4,3,2,1) remaining on the security counter.

When the instrument enters the alarm state, it beeps for approximately 10 seconds. At this time, the instrument displays **SEC** on the LCD along with **SECURITY COUNT** in the ID field in the upper left-hand corner of the screen. The instrument is then disabled. Returning the instrument to the wall holder resets the security count. If the count is set to "OFF" the temperature count function is disabled and no security alarm will occur.

To set the Temperature Count security feature, please refer to the Service Manual.

INSTANT-ON

When the Instant-On feature is activated, the instrument goes into the security alarm state within five seconds after removal from the wall holder. When the instrument enters the alarm state, it beeps continuously and displays **SEC** on the LCD. Pressing the **Mode Selection** button while removing the probe from the probe well, within 30 seconds of the instruments removal from the wall holder, clears the alarm and allows the instrument to operate. Returning the instrument to the wall holder will reset the instant audio alarm.

The options for the Instant-On feature are ON and OFF. In the OFF setting, no security alarm will sound.

To set the Instant-On security feature, please refer to the Service Manual.

Maintenance

REPLACING THE BATTERIES

1. Remove the box of probe covers from the probe cover storage compartment on the back of the unit.
2. Remove the probe and the probe well.
3. Press inward on the textured grips on each side of the assembly to remove the battery door from the back of the unit.
4. Remove the three AA 1.5Vdc alkaline batteries and replace all three batteries with AA 1.5 Vdc alkaline batteries. Match the +/- polarity of each battery to the +/- symbols inside the battery compartment.

   WARNING Use size AA 1.5 Vdc alkaline batteries only. Use of any other battery size or type could damage the thermometer and cause personal injury.

5. Snap the probe cover storage assembly back into place.

6. Replace the probe and probe well.

Caution Remove the batteries, if the instrument is not used for an extended period of time, to avoid possible damage to the thermometer due to battery leakage.

Cleaning and Disinfection

Clean and disinfect on a routine basis according to each facility's policy or whenever contamination occurs.

CLEANING AND DISINFECTING THE THERMOMETER AND PROBE

Wipe the thermometer and probe with an appropriate health care low- or intermediate-level cleaner/disinfecting wipe that incorporates either a 1:10 sodium hypochlorite (bleach) solution or isopropyl alcohol as the active disinfection ingredient. Follow wipe manufacturer's instructions for appropriate use, contact times and applicable warnings and precautions.

Caution DO NOT immerse or soak the thermometer or probe in any type of fluid.

Caution DO NOT use steam, heat, or gas sterilization on the thermometer or probe.

Caution DO NOT autoclave the thermometer or the probe.

CLEANING AND DISINFECTING THE REMOVABLE PROBE WELL

- Remove the probe well from the unit. Unplug the latching probe connector to prevent the device from consuming battery power while you are cleaning the probe well.
- Clean the inner surface of the probe well by swabbing the surface with a cloth dampened with a 1:10 sodium hypochlorite (bleach) solution or isopropyl alcohol solution as the active disinfection ingredient. Clean the probe well's outer surface by swabbing or wiping the surface with one of the solutions mentioned above.

Caution DO NOT use hard or sharp objects to clean the probe well. This could damage the probe well and cause the unit to not function properly.

Caution DO NOT use steam, heat, or gas sterilization on the probe well.

Caution DO NOT autoclave the probe well.

- Thoroughly dry all surfaces before re-assembling the instrument.
- Re-connect the latching probe connector to the thermometer. Ensure that the connector snaps into place.
- Re-install the probe well in the thermometer and snap the probe well into place.
- Insert the probe into the probe well.

Disposal

DISPOSING OF EQUIPMENT

Do not dispose of this product as unsorted municipal waste. Prepare this product for reuse or separate collection as specified by Directive 2002/96/EC of the European

Parliament and the Council of the European Union on Waste Electronic and Electrical Equipment (WEEE). If this product is contaminated, this directive does not apply.

For more specific disposal information, see www.welchallyn.com/weee, or contact Welch Allyn Customer Service at +44 207 365 6780.

DISPOSING OF BATTERIES

Dispose of used batteries properly. Consult your local recycling authority for proper procedures.

DISPOSING OF PROBE COVERS

Ensure that probe covers are disposed of according to facility requirements or local regulations.

Performance and Technical Specifications

Ambient Operating Temperature Range	50.0 °F to 104.0 °F (10.0 °C to 40.0°C)
Operating Altitude	-557 ft. to +16,000 ft / -170m to +4877m
Patient Temperature Range	80.0 °F to 110.0 °F (26.7 °C to 43.3 °C)
Temperature Predict Time*	Oral: Approximately 4–6 secs. Adult axillary (18 years and older): Approximately 12–15 secs. Pediatric axillary (17 years and younger): Approximately 10–13 secs. Rectal: Approximately 10–13 secs.
Transport/Storage Temperature	-13°F to +131°F (-25°C to +55°C)
Calibration Accuracy	+/- 0.2 °F (0.1 °C) (Monitor Mode)
Humidity	15% to 95% non-condensing
Dimensions	8.46" x 3.18" x 2.43" (215mm x 81mm x 62mm)
Weight	12.6 ounces/357 grams
Power	(3) 1.5Vdc AA batteries
Equipment Classification	Internally powered, Continuous Operation Not AP or APG equipment
Applied Part	Thermometer probe
IPXØ	Not protected against the ingress of water.

* Predict time depends on probe placement and patient condition. Predict times do not include tissue contact-detection time or time needed to place the probe into the measurement site.

Guidence and Manufacturer's Declaration

EMC compliance

Special precautions concerning electromagnetic compatibility (EMC) must be taken for all medical electrical equipment. This device complies with IEC EN 60601-1-2:2007.

- All medical electrical equipment must be installed and put into service in accordance with the EMC information provided in this document and the Welch Allyn SureTemp PlusDirections for Use.
- Portable and mobile RF communications equipment can affect the behavior of medical electrical equipment.

The Welch Allyn SureTemp Plus complies with all applicable and required standards for electromagnetic interference.

- It does not normally affect nearby equipment and devices.
- It is not normally affected by nearby equipment and devices.
- It is not safe to operate the SureTemp Plus in the presence of high-frequency surgical equipment.
- However, it is good practice to avoid using the SureTemp Plus in extremely close proximity to other equipment.

Emissions and Immunity Information

Electromagnetic Emissions

The Welch Allyn SureTemp Plus model 690 and 692 is intended for use in the electromagnetic environment specified below. The customer or the user of the Welch Allyn thermometer should assure that it is used in such an environment.

Emissions Test	Compliance	Electromagnetic Environment - Guidance
RF emissions CISPR 11	Group 1	The Welch Allyn SureTemp Plus uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The Welch Allyn SureTemp Plus models 690 and 692 are suitable for use in all establishments other than domestic, and may be used in domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes, provided the following warning is heeded: WARNING: This equipment/system is intended for use by healthcare professionals only. This equipment/system may cause radio interference or may disrupt the operation of nearby equipment. It may be necessary to take mitigation measures, such as re-orienting or relocating the Welch Allyn SureTemp Plus models 690 and 692 or shielding the location.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Electromagnetic Immunity

The Welch Allyn SureTemp Plus model 690 and 692 is intended for use in the electromagnetic environment specified below. The customer or user of the Welch Allyn thermometer should assure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/ output lines	±2 kV for power supply lines ±1 kV for input/ output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions, and voltage variations on power supply input lines. IEC 61000-4-11	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (>95% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 seconds	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (>95% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 seconds	Mains power quality should be that of a typical commercial or hospital environment. If the user of the Welch Allyn SureTemp Plus 690 and 692 requires continued operation during power mains interruptions, it is recommended that the Welch Allyn SureTemp Plus be powered from an uninterruptible power supply or battery.
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

Note: U_T is the AC mains voltage prior to application of the test level.

Electromagnetic Immunity

The Welch Allyn SureTemp Plus models 690 and 692 is intended for use in the electromagnetic environment specified below. The customer or user of the Welch Allyn thermometer should assure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
			Portable and mobile RF communications equipment should be used no closer to any part of the Welch Allyn SureTemp Plus models 690 and 692, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance**
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms	$d = (1.17)\sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	$d = (1.17)\sqrt{P}$ 80 MHz to 800 MHz $d = (2.33)\sqrt{P}$ 800 MHz to 2.5 GHz where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and *d* is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol:

Note 1: At 80 MHz and 800 MHz, the higher frequency range applies.

Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

[a] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Welch Allyn SureTemp Plus is used exceeds the applicable RF compliance level above, the Welch Allyn SureTemp Plus should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the Welch Allyn SureTemp Plus.

[b] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Recommended separation distances between portable and mobile RF communications equipment and the Welch Allyn SureTemp Plus model 690 and 692

The Welch Allyn SureTemp Plus models 690 and 692 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or user of the Welch Allyn thermometer can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Welch Allyn thermometer as recommended below, according to the maximum output power of the communications equipment.

Separation distance according to frequency of transmitter (m)			
Rated maximum output power of transmitter (W)	**150 kHz to 80 MHz** $d = (1.17)\sqrt{P}$	**80 MHz to 800 MHz** $d = (1.17)\sqrt{P}$	**800 MHz to 2.5 GHz** $d = (2.33)\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.20	1.20	2.30
10	3.70	3.70	7.40
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance *d* in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

Note 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

Note 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

Replacement Parts and Accessories

To order replacement parts and accessories, please contact the Welch Allyn office nearest to you.

Accessories List

Part #	Description
01802-110	9600 Plus Calibration Tester
02891-000	Removable Probe Well (Blue)
02891-100	Removable Probe Well (Red)
02892-000	Probe and Well Kit (Incl. Probe) 4 ' Rectal
02892-003	Probe and Well Kit, 4', Vet
02892-100	Probe and Well Kit (Incl. Probe) 9 ' Rectal
02892-103	Probe and Well Kit, 9', Vet
02893-000	Probe and Well Kit (Incl. Probe) 4 ' Oral
02893-100	Probe and Well Kit (Incl. Probe) 9 ' Oral
05031-750	Disposable Probe Covers - 7500/Case
06138-000	SureTemp® Calibration Key
106701	Operators Manual (DFU)
406682	Soft Carrying Case

Service

Except for the replaceable AA batteries, this instrument contains no user-serviceable parts. Return the thermometer to a Welch Allyn authorized service center for service and repair. Refer to the Service Manual.

Welch Allyn Service Policy

Only a Welch Allyn Service Center can perform or approve all repairs on products under warranty. Unauthorized repairs will void the warranty. Qualified electronics personnel or a Welch Allyn Service Center should repair out-of-warranty products.

Contacting Welch Allyn

If you encounter an equipment problem that you cannot resolve, contact the Welch Allyn Service Center nearest you for assistance.

Before returning a product for repair, you must first obtain authorization from Welch Allyn. If you are advised to return a product to Welch Allyn for service or repair, you should schedule the repair with the Welch Allyn Service Center nearest you.

Welch Allyn service personnel with provide you with a a Return Materials Authorization (RMA) number. Print this number on the outside of your shipping box.

Welch Allyn does not accept returns that are missing an RMA number.

Limited Warranty

THREE-YEAR LIMITED WARRANTY ON MODEL 692 AND TWO-YEAR LIMITED WARRANTY ON MODEL 690 INSTRUMENTS

Instrumentation purchased new from Welch Allyn, Inc. (Welch Allyn) is warranted to be free from original defects in material and workmanship under normal use and service for a period of three years for Model 692 and a period of two years for Model 690 from the date of first shipment from Welch Allyn. This warranty shall be fulfilled by Welch Allyn or its authorized representative repairing or replacing at Welch Allyn's discretion, any such defect, free of charge for parts and labor.

Welch Allyn must be notified via telephone of any defective product and the item must be immediately returned, with an RMA number provided by Welch Allyn, securely packaged and postage prepaid to Welch Allyn. Loss or damage in shipment shall be at the purchaser's risk.

Welch Allyn will not be responsible for loss associated with the use of any Welch Allyn product that (1) has had the serial number defaced, (2) has been repaired by anyone other than an authorized Welch Allyn Service Representative, (3) has been altered, (4) has been used in a manner other than in accordance with the instructions, or (5) has been abused or exposed to extreme environmental conditions.

ONE-YEAR LIMITED WARRANTY ON PROBES AND PROBE COVERS

Welch Allyn warrants probes and probe covers to meet Welch Allyn's specifications for the Product at the time of purchase and to be free from original defects in material and workmanship under normal use and service for a period equal to one-year from the date of first shipment of such Product to the customer by or on behalf of Distributor. Probe covers are intended for single use only.

NINETY DAY LIMITED WARRANTY ON REMOVABLE PROBE WELLS

Removable probe wells (blue oral and red rectal) are warranted to be free from original defects in material and workmanship under normal use and service for a period of ninety days from the date of first shipment from Welch Allyn.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE, OR OTHER WARRANTY OF QUALITY, WHETHER EXPRESS OR IMPLIED. WELCH ALLYN WILL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE SALE, USE, OR IMPROPER FUNCTIONING OF THE INSTRUMENTATION REGARDLESS OF THE CAUSE. THE DAMAGES FOR WHICH WELCH ALLYN WILL NOT BE RESPONSIBLE INCLUDE, BUT ARE NOT LIMITED TO, LOSS OF REVENUE OR PROFIT, DOWNTIME COSTS, AND LOSS OF USE OF THE INSTRUMENTATION.

Service Centers

For information about any Welch Allyn product, contact Welch Allyn Technical Support:

http://www.welchallyn.com/about/company/locations.htm

Welch Allyn®

4341 State Street Road
Skaneateles Falls, NY 13153
Tel: +1 800 535 6663
Fax: +1 315 685 3361
www.welchallyn.com

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